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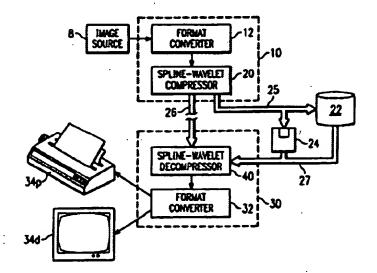
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(54) Title: COMPRESSION AND DECOMPRESSION OF DOCUMENTS AND THE LIKE

(57) Abstract

An apparatus and a corresponding method for performing compression and reconstruction of documents are disclosed. Compression of the document is performed by applying a scaling function and a wavelet function first in one direction (e.g., rows) and then in another direction (e.g., columns) to digital data representing the document. The scaling and wavelet functions correspond to spline and wavelet functions that are compactly supported over a convolution interval, and which can also be implemented by way of integer operations. Byte-packing may also be applied to the image data, without regard to pixel boundaries, allowing not only binary (two-color) documents to be compressed but also enabling the compression of more complex color documents. The spline-wavelet compression and reconstruction may be performed according to alternative methods, including dual-base wavelets, interpolatory wavelets, and wavelet packets.